Combined Heat and Power
Workshop Report and Next Steps

Power Committee Briefing 7-15-03

Dick Watson- NWPCC

Re-Presented by John Ryan- WSU Energy Program to Food Processors- 12-10-03

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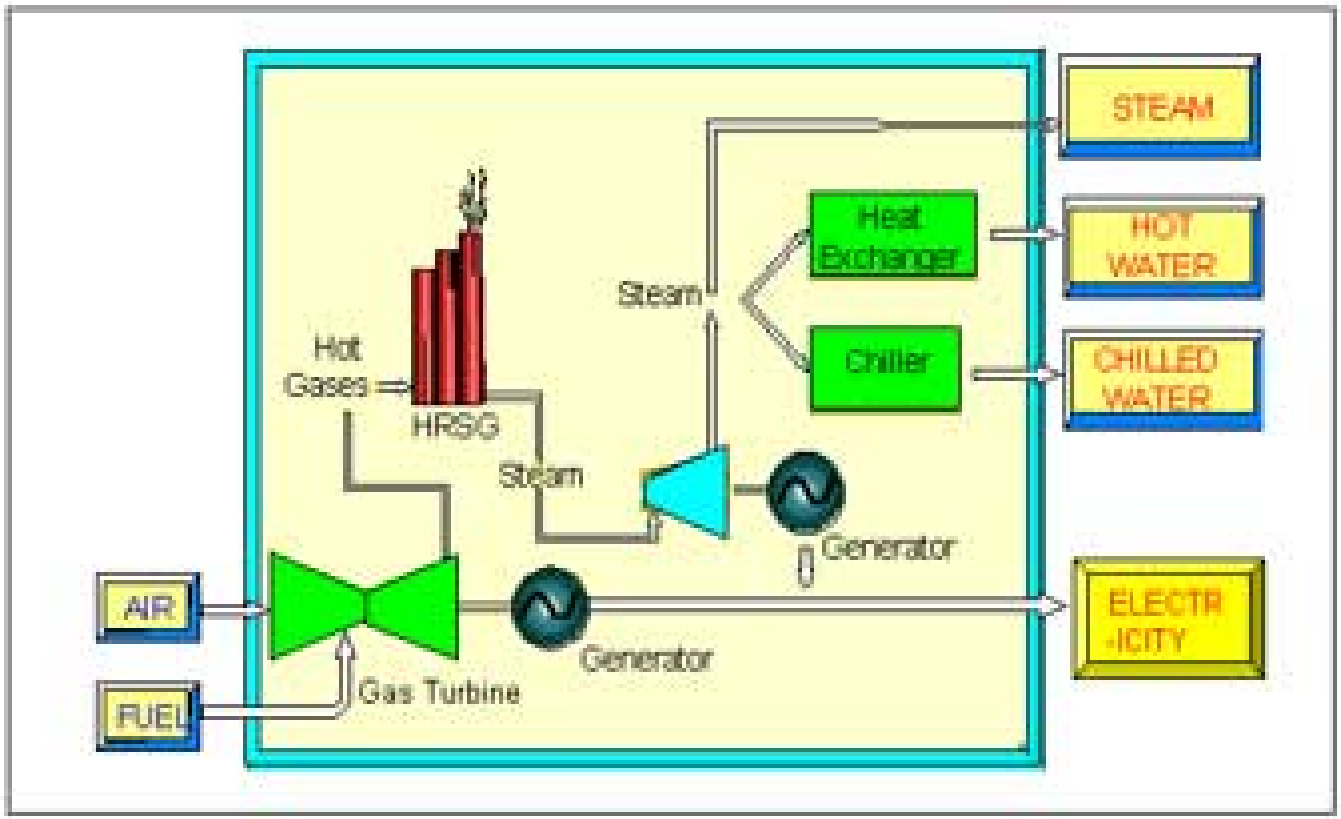
Combined Heat and Power (CHP) (AKA cogeneration)



- Benefit? Greater overall efficiency than separate production of electricity and thermal energy

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Other Potential Benefits of CHP

- Stabilize & improve industry competitiveness
- Local tax & employment benefits
- Environmental benefits:
  - Offset air emissions from older equipment (often net reduction)
  - Reduced water consumption
  - CO2 offsets
  - Low profile (existing industrial sites)
- Generation near load

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CHP

- A priority resource under the Act (conservation, renewables, high efficiency, all others)
- There is CHP in the region
  - 3450 MW total
    - 2500 "PURPA Machines" -- small percentage energy as heat
    - 900 + with relatively high heat load
- Renewed interest on part of industries
  - Increased electricity and gas prices But some frustration re lack of interest from utilities

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CHP Workshop

- Co-sponsored by US DOE and WSU Energy Program, Council
- Objectives –
  - Identify barriers to CHP in NW
  - Identify potential solutions
- Participants
  - Industries – forest products, food processing, petrochemical, …
  - Utilities – IOUs and publics
  - Regulators

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Format

- Case Studies of 4 projects – some in service, some still planning stage
- Identified and prioritized CHP drivers & barriers
- Broke into three separate groups to identify potential solutions to top priority barriers

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Overarching issues – affecting all resource development

- Uncertainty re Bonneville future role –

  Should I acquire resources myself or will it be better to have Bonneville do it for me? (and meld in the cost with the FBS)

- Transmission & interconnection
  - Interconnection requirements
  - Is there capacity available?
  - Why does the assessment of interconnection and upgrade requirements take so long?
  - What will upgrades cost?
  - Why do I have to pay, and pay for it up front?
  - Why do upgrade requirements change over time?

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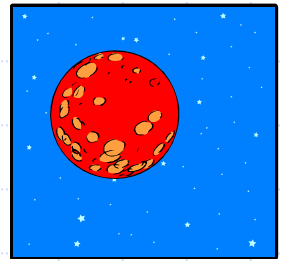
CHP specific – Industries are from Mars



- Very high investment hurdle rates
- Producing electricity a sideline
  - Produce it when their operations make it possible, don't produce it when they don't
- If relying on CHP for electricity – want backup
- Don't understand why environmental benefits of CHP not valued as in wind

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Utilities are from Venus

- Lower cost of capital
- Want completely dispatchable resource
  - Run when prices are high
  - Not run when prices are low
- Don't want to lose revenues to self-generation
- IOUs would like opportunity to make return on investment

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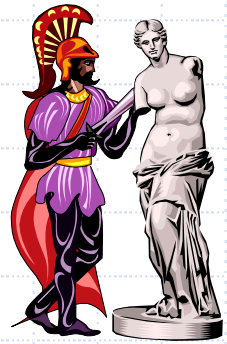
Can there be a marriage?



- Industries major utility revenue source and significant to local economies
- Industries need to reduce or offset energy costs
- Utilities have need for resources
- Both want to demonstrate environmental stewardship
- Both need viable business propositions

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Possible solutions

- Clarify Bonneville's role in power supply ('nuff said)
- Transmission & Interconnection
  - Interconnection standards for smaller CHP
  - RTO or, absent RTO
    - Clarity and consistency re Avaliable Transmission Capacity (ATC)
    - Transparent short-term markets for capacity, energy, ancillary services, transmission release capacity
    - Alternative means for financing transmission expansion
    - Timely & consistent assessment of interconnection & upgrade requirements

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Possible solutions (2)

- Projects should be partnerships ("everyone needs a skin in the game")
  - Utility or Joint funding of capital improvements
  - Performance agreement/products with insurance (physical or financial)
  - Ability of utility to earn a return long-term purchase agreements

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Possible solutions (3)

- Regulatory or policy changes
  - Require consideration of CHP in IRPs
    - Assessment of cost & potential
    - Requirements to actively seek CHP where needed & cost-effective
  - Environmental "credit" to CHP:
    - Production tax credit prorated for relative environmental benefits
    - Eligibility of CHP in state systems benefit charge programs
    - CHP in RPS

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Possible solutions (4)

- Improved education & PR
  - Council's plan
  - Advocacy organizations

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Next steps

- Evaluate possible solutions
- Follow-up meetings?
- Incorporate in 5th Plan's Action Plan
- Work with parties to implement

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